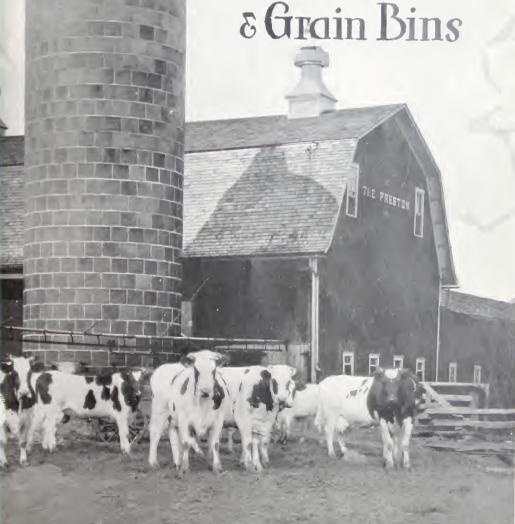
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The Dansing

Vitrified Tile Silos & Grain Bins





The Joston-Lansing Vitrified Tile Silos E Grain Bins

J. M. PRESTON COMPANY LANSING, MICHIGAN



You Can Always Depend Upon a Preston-Lansing Tile Silo

EVERYONE will tell you that vitrified tile makes the ideal silo material. It will never burn down, never wear out or start to decay. It requires no upkeep expense; no painting, no hoops to tighten, no anchoring system to watch.

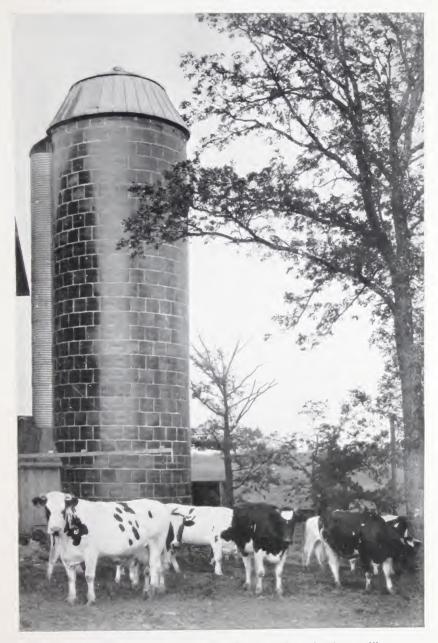
Its first cost is the only cost.

In the Preston-Lansing Silo, you get all the advantages of vitrified tile durability, plus the strength and beauty of Preston-Lansing construction.

It's this construction that makes the big difference between Preston-Lansing and other tile silos. The "ship-lap" joint, twisted steel reinforcing, smooth walls, thin mortar lines, uniform shades of blocks, hip roof, and other Preston-Lansing features provide for better, more satisfactory service.

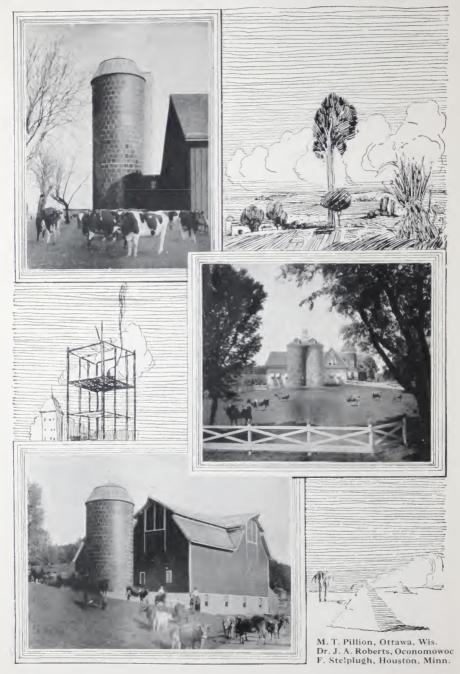






Preston-Lansing Silo on the Farm of Mrs. Kate Miller, Larrington, III.





The Preston-Lansing Block

Superior in Form and Material

T is the design of this block that makes Preston-Lansing Silos and Storage Bins strong, easily built and beautiful.

It is the material—Vitrified Tile—that makes them everlasting, frost, damp, rot, vermin and fire-proof. Lansing Tile is made from special shale and fire clay. This combination can reach a vitrification unknown to other clays and has been selected from many experimental combinations as the finest that can be obtained.

The process of vitrifying shale and clay, as you may know, is burning it to a high heat, and letting it cool gradually. This takes all the moisture out of the block and melts it into a solid mass, so hard that no moisture or decaying elements can penetrate it.



The Superior Fluted Block

The finished block is 15x15 in. inner face measurements and 6 in. in thickness. It is thoroughly glazed on both inside and outside faces.

After the tile is vitrified it is glazed. This is a process of treating it with salt which gives it a glossy effect. Glazing gives to tile the protection that high grade varnish and paint give to wood. It also gives the tile a better appearance.

This gives you a block that will last for ages. There is no wear out or decay to it. It is formed out of the most durable material known to mankind, it is designed to form the neatest appearing and strongest possible silo wall.

Extra Thick Layer of Cement With Thin Line Exposed

Note the deep grooves in the top and bottom of the block. These provide for an extra thick layer of cement between the blocks, showing but a thin line of cement in the joint after the silo is built. This makes a smooth wall inside and a better looking wall outside. (Study cross-section illustration at top of following page.)

as e

The inside of the silo is practically as smooth as a bottle, the silage settles better in the silo. There are no air pockets caused by grooves or projections to spoil it.

This thick layer of cement, combined with a twisted steel reinforcing, provides enormous strength. Though subjected to the terrific pressure that all silo walls have to withstand, it has a wide margin of strength that enables it to support, additionally, a great weight.

This method of having the deep groove in both top and bottom of the block produces the well known tongue and groove style of joint, thoroughly sealing against passage of air or moisture and interlocking every course of blocks with the other courses above and below, thus not leaving each individual course to its own strength for supporting the pressure, but tieing the entire wall together and adding greatly to the strength of the walls

Many make use of this extra strength by building a heavy water tank on top of the silo. We discuss this to a greater extent on Page 17.

Two Big Air Spaces

Insulation is obtained by two big air-spaces. They are just big enough to avoid filling with cement when you are building, yet efficient in supplying proper dead air space.

Our Method of Reinforcing Around Doorway,

The special fluting or series of projections shown on the ends of the block not only help to prevent the cement from slipping while you are putting the blocks together but enable the cement to get a stronger grip on the blocks. This feature also adds to the strength of the silo.

The Ship-Lap Joint

To the best of our knowledge the Preston-Lansing Silo is the only silo with the "ship-lap" joint. This joint is of great importance in making the tile wall permanently solid.

You know the "ship-lap" joint principle as applied to lumber. We have applied the same form of construction to silo walls, with the joint running up and down instead of horizontal. This adds considerably to the strength of the wall and prevents frost working through into the silo.



The Twisted Steel Reinforcing System

In cement reinforcing, twisted steel rods show about 10% greater



Twisted Steel Reinforcing laid in Cement-Top View.

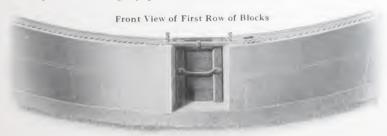
efficiency than the same pieces not twisted. The ecement grips twisted steel more firmly.

In the construction of the Preston-

Lansing Silo a twisted steel hoop is securely imbedded in concrete every fifteen inches (or between every row of blocks), giving you a hoopage system that will withstand tremendous strain. Every other hoop goes completely around the silo—the others are bent up at the door, run through solid concrete inside special door-jamb blocks and pass through an angle iron that crosses the doorway.

This angle iron provides a secure, substantial rung for the ladder—holds the door in place and protects the twisted steel hoops that encircle the silo. Angle steel will not bend or sag as readily as a pipe or rod of steel. Upon studying the illustration at bottom of page eight you will see why the Preston-Lansing system of reinforcing around doorways is the strongest.

The twisted steel reinforcing of the Preston-Lansing Vitrified Tile Silo is so placed in the large groove of the horizontal joint between the courses of blocks that the tensile strength of the steel bars is directed against a strong shoulder of the tile blocks, securing the benefit of the full tensile strength as would be obtained by placing a hoop on the outside of silo-wall, and at the same time leaves the steel reinforcing imbeded in cement joint, thoroughly protected from effect of weather.



Doors Start at Bottom

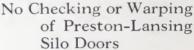
The Preston-Lansing Vitrified Tile Silo has one more removable door than is generally found in a tile silo. This door is at the bottom and its lower edge rests directly upon the foundation. You do not have so high an opening to pitch silage through when you get near the bottom of the silo or pit.



Uniform Color of Preston-Lansing Blocks

There is no question but that if given two silos of equal efficiency you would prefer the one that was the better looking. This is natural, as no one wants a silo that is like a checker-board with light and dark patches. The Preston-Lansing Silo has great beauty because all the blocks are of uniform color. We take special care in the selection of the shale and clay and the vitrifying process is carefully watched so that all blocks are as uniform in color and shade as possible.

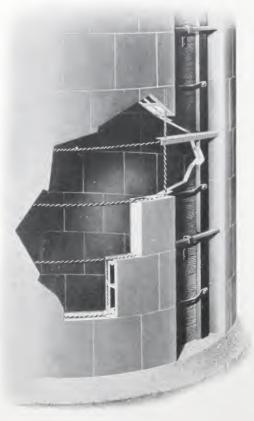
The man who takes pride in having a good looking, well painted barn will want the best looking silo. Only those who have seen the Preston-Lansing Tile Silo can appreciate the wonderful improvement that uniform color makes in the appearance of tile. This, combined with the very thin line of cement between the blocks, gives you a silo that you will always be proud of.



The doors in the Preston-Lansing Tile Silo are made of clear California redwood. The noted characteristic of this wood is that it will not check or warp.

Because it withstands the weather so well we have chosen this material for the doors. These doors are held by a hook which hangs from the angle of steel that forms the ladder rung. Each door rests on and is joined to the one below by a tongue and groove. This prevents any possibility of warping and makes the entire doorway absolutely air tight at all times.

The silage presses the door against the frame and holds it perfectly tight. A felt strip is attached to the door which excludes the air and acts as a cushion between



the door and the tile. The simplicity of this system makes the operation of the door very simple, as well as being air tight.

Whenever it is desired to erect the Preston-Lansing Silo with a pit below the level of the feed alley floor it is easily handled by simply letting

the blocks run all the way around until you get to that level, then starting the bottom door blocks thereon, the blocks being made to allow this interchange from door and jamb blocks, to complete circle of standard blocks.

When the silo is erected as on the bank side of the barn, the bottom pit below ground is best made by extending the Vitrified Tile Silo down to the level of feeding floor, and in that case we would furnish the door tile and doors to make the doorway to the bottom of the pit, thus enabling the silage to be removed without lifting.

The door frame is made of special form vitrified clay blocks, with jambs to receive the silo doors, making a smooth wall and perfect fitting jamb for the doors. These door posts or jamb blocks are filled with cement, thus forming solid posts from bottom to top of silo, being reinforced by every other band of twisted steel reinforcing which encircles the silo, turning up at the doorway through these special jamb blocks and embedded in the cement which fills them. Doors are 24 in. wide, 30 in. high and 13% in. thick, or one door to each two rows of blocks.

The other band of reinforcing encircling the silo, passes across the doorway underneath the angle cross bar making a complete hoop or circle of the silo.

An Easy Climbing Ladder

There is quite a little space between the ladder rungs and the door. You will find plenty of room there to secure hand and foothold, which is a mighty good thing in cold weather when you have on heavy shoes and gloves.

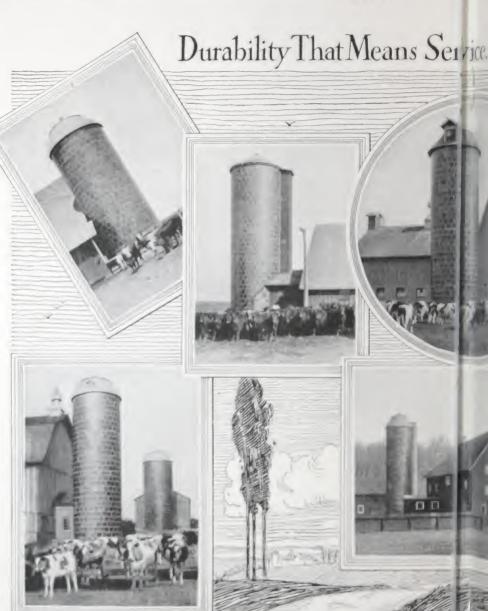
The doors and the ladder are set back into the door space which allows plenty of climbing room and permits the doors to be easily operated. No space is taken up by awkward projections. The ladder is an easy one to climb yet it does not stick out taking up space.

Preston-Lansing Silos Easy to Erect

There is nothing hard about it. Simple as A, B, C, from start to finish. The ship lap joint naturally suggests the proper position for every block. We supply a full set of plans and instructions on how to build the silo when we ship the material. If you don't want to build it yourself, hire someone to build it for you. You simply start the first row of blocks or the foundation as per our directions, and then keep on adding row after row until the silo is finished. The only way you can get the blocks together is the right way, otherwise you will discover the error immediately.







Sibert Hartwig, Polo, Ogle Co., III. Edward Dietz, Walcott, Ia. August P. st.,
D. A. Menzies, Janesville, Wis. J. M. Stude &c.,

Ser ce, Design That Means Beauty

)conomowoc, Wis.

Adolph Drinckhahn, Minneiska Mrs. Mary McCahill, Lake City

August Pabst, Oconomowoc

The Preston-Lansing Hip Roof With Dormer Over Chute

THERE are a number of reasons why we recommend this hip roof for all Preston-Lansing Tile Silos. In the first place it adds to the capacity of your silo. Saves several feet of space every year. You can fill clear up to the upper part of the roof and then when the silage settles, it will be about even with the top of the tile wall. This gives you the advantage of every inch of space in your silo.

Another reason is the beauty it adds to the structure. Just as a good hat makes a difference in the appearance of a man, so does a good roof

make a difference in the appearance of a silo.

Still another reason why we recommend this roof is its durability. It is fireproof, made of galvanized steel. Withstands weather. Is firmly anchored to the tile; winds do not blow it off.

Many of our customers find that they wish to add to the height of their silo in a year or two, which is very practical with the Preston-Lansing construction, and in such case this hip roof can be removed and replaced without any loss of parts—a decided advantage.

This roof is self-supporting. There are no rafters, cross-beams, nor a center pole to work around. It is the kind of roof construction that you want to match the durability you get in the Preston-Lansing silo.

Dormer Window Admits Light

It allows a flood of light to run down into the silo and the chute—an especially valuable feature for safety. Windows, of course, can be placed at intervals down the chute, but the light at the top of the chute means



Fourteen



much to the man who has to work around the silo day after day. No outside ladder is needed, as this dormer over the chute allows you a means of getting in and out of the silo after it is filled.

The dormer also adds to the beauty of the roof, breaks up the monotony of having a complete circle and gives a more finished appearance to the structure.

Preston-Lansing Corrugated Steel Chutes

Retain the indestructible advantages of your silo by using the Preston-Lansing Corrugated Steel Silo Chute in connection with your steel roof. This steel chute costs you no more than a good wooden chute and is much easier to build.

It is made of the best quality steel, galvanized properly to protect the metal from the weather. It is attractive, strong, and will last indefinitely.

Any number of windows may be furnished. Fitted to either side or the front of the chute to give light.

At the top of the chute you can have either the dormer-window as illustrated on page 14 or a slanting corrugated steel roof. This steel roof is supported by four braces, which are bolted to the top section of

the chute. The space between the top of the chute and the roof is fitted with a screen to keep out birds and give some protection from the weather.

The roof can be furnished with hinges when requested, thus allowing a means of climbing out of the top of the chute.

We recommend setting the silo back from the barn as illustrated on page three which allows the construction of a feedroom, the size of which may be varied to suit the individual case. Some desire to make this feed room large enough to accommodate a bin for storing chopped feed, enabling the use of a divided feed truck and one trip doing the work of feeding both silage and grain feed, while others may only desire a space large enough to accommodate the silage for one or two feeds, or the storing of truck or baskets, but in either case we know from experience the benefits received will over-reach the cost of such feed room.

Preston-Lansing Tile Chutes

Preston-Lansing Vitrified Tile Blocks, four or six inches in thickness, can be furnished for building silo chutes. Detailed information will be furnished upon request.



Preston-Lansing Steel Chute

How to Figure the Size of Your Silo

ETTING the right size silo depends largely upon the size of your herd and how you regulate the feeding. Many men have been

Silo and Water Tank on the Farm of Milton Cowles

using silage only as a winter feed, but the more successful farmer, and particularly the man who has high priced land, has been keeping silage for feeding all the year around.

In some sections of the country, land has too high a value to allow it to remain in pasture. The silo is the answer to raising stock and keeping dairy cows on such land.

Also it is well to consider feed insurance, should your pasture be burned up with drought or your season's crop prove a failure it is good economy to have a stock of silage on hand, we have known silage kept in the silo until five years old and this silage was better and richer then than that placed in the silo the fall before, and we know of some large stock raisers who always count on having one or two silos untouched until needed in such emergencies.

If your herd is of pretty good size it might be better to consider two silos. At any rate get a good size silo. You can always use it. Your needs will increase from time to time, and the few extra feet you put on now will be more economical than building an addition later on.



Below we give a list of standard sizes. Also their approximate capacity, number of acres of corn required to fill each silo and estimated number of grown cattle that can be fed forty pounds silage per day, per head for about six months.

Diameter, Ft.	Height, Ft.	Est. Cap. Tons	Est. No. Cattle	Est, Acres Corn		
10	25	38	11	4		
10	271/2	43	12	4 1/2		
10	30	48	13	5		
12	25	57	15	5 1/2		
12	271/2	64	17	6		
12	30	72	18	4 1/2 5 5 1/2 6 7		
12	35	85	22	81/2		
12	40	100	25	9		
14	25	75	18	8½ 9 7 9		
14	30	94	22	9		
14	35	115	28	10		
14	40	135	32	13		
14	45	160	38	15		
16	25	100	24	9		
16	30	120	28 35	101/2		
16	35	148	35	14		
16	40	180	42	17 1/2		
16	45	220	50	20		
18	30	150	38	14		
18	35	185	45	18		
18	40	229	56	21		
18	45	275	68	27		
20	30	187	45	18		
20	35	235	58	22		
20	40	281	70	28		

Build a Water Tank on Your Silo

HERE is an economical way to have running water in your farm buildings. Get fresh water at the faucet in your house and barn and such other buildings as you may want to supply.

The walls of the Preston-Lansing Tile Silo are strong enough to supply the necessary support for a good size tank on the top of the silo.

This is a particular advantage for supplying a water bowl system in connection with the dairy barn. Placing the tank on the top of the silo instead of in the haymow or some part of the barn means saving valuable space. The supply pipes are packed with frost-proof covering in a box beside the chute of silo as shown on opposite page.

If you would like to have a good size water tank on top of your silo and are in doubt about how to build it or how to plan the floor of the tank, write us, and we shall be glad to explain in detail.

Feed Silage to all Stock

You can feed silage to practically all classes of farm stock with good results. Pre-eminently, silage feed has been generally intended for cattle, particularly the dairy cow, breeding cattle and growing stock, and other young animals which would otherwise be wintered exclusively on dry forage. In effect, silage is a good deal like the palatable, succulent, summer grass. However, do not let this cause you to overlook the fact that it is after all a roughage and not a concentrate. Keep this in mind when making up the rations.

Do not make silage the only feed. While it may be that some feeders here and there have used it only as a roughage in times when feed was scarce, the practice is not a good one. You will get much better results by adding some dry feed with it.

Protein, the most valuable element in food substances, is required by all animal life. Growing animals need it in greater proportion than the older ones. Corn, kaffir corn, sweet sorghum and milo have generally been used for making silage, and these lack a sufficient quantity of protein or the growth producing elements which must be supplied through some other feed. Leguminous ha, and silage make a good combination. This provides an efficient and economical source for protein, as it can be produced on your own farm.

A Few Facts on Silage Feeding

It is now quite generally understood by almost every American farmer that the silo is as necessary on the farm as the barn, the hog pen, or any of the other buildings. There is no question about it, the silo has done more to lower the cost of farm stock than almost any other factor.

For drought insurance the silo is practically indispensible. In fact, in many sections it has been found more economical to buy a new silo every year than to get along without one. Nothing takes the place of a burnt-up pasture as efficiently as a well stocked silo. And no other form of feeding can give you as efficient returns from your corn crop. A large proportion of the stover is lost when cured in the field. In the silo practically all of it is saved.

Like canned goods in your cellar, good silage can be kept as long as you do not expose it to the air. You can carry silage over from a good crop to a second or even a third year successfully.



Preston-Lansing Storage Bins

The big advantages of Vitrified tile blocks in silo construction readily adapt themselves to the building of storage bins for all materials.

Both forms of construction are used for the same purpose, namely the preservation of food. In a grain storage tank you want a construction that will protect every bushel of grain you place within it. Vitrified Tile Blocks are the most practical material known for this purpose. And like in tile silos the first cost is the only cost.

You Can't Burn Vitrified Clay

That's the big advantage in Preston-Lansing Storage Bins. They are practically indestructible. Severe storms or cyclones have had no effect on them.

But the margin of safety for fire protection is something for you to consider. How many hundreds of thousands of bushels of grain are lost every year through fires in wooden elevators and grain bins?

Even though well-insured, a loss through fire is a big loss to some one. Insurance simply distributes the loss over the community to protect the individual.

There is no insurance as good as the insurance that *prevents* loss. Put *your* grain in Preston-Lansing Tile Bins and you have put your investment in safe keeping.

Save Expense

Fire insurance is always an expense. Putting your grain in fire-proof bins naturally reduces the cost of insurance.

Repairs are another expense item that you want to consider. With ordinary usage there is no upkeep expense on vitrified tile. There is no painting necessary; no plastering, no waterproofing do so. Once erected, you have a grain storage that should last for many years of constant service.

This means not only reducing repair expense, but preventing deterioration. It means keeping up the valuation of your property. Vitrified tile can not wear out, rust or decay.

Reduce Grain Losses

Consider the grain that's lost every year to rats and vermin. Also to damage through moisture creeping into the grain bin.

Here are agents of destruction that you shut out with Vitrified Tile. Rats and vermin cannot gnaw through. Moisture will not penetrate. Stopping these losses alone would soon pay for Preston-Lansing Bins.





Six 10x40 Storage Bins, Chilhowie Milling Co., Chilhowie, Virginia

The glass-like finish turns away moisture. The air spaces in the blocks insulate the walls.

No sudden changes of temperature outside can affect the grain. These dead air spaces provide a more uniform temperature in the grain bin. The storage space is kept warm in winter and cooler in summer.

This means much in preventing "sweating" or "burning" of grain in the bin.

Keep Grain in Good Condition

Your grain storage bins should keep every bushel of your grain in good condition until the grain is needed. It should be protected against



the elements you know are robbing owners of thousands of dollars every year. Not only fire, rats, vermin and moisture, but dust and dirt.

This protection you are assured of in the Preston-Lansing Vitrified Tile. You get a permanent investment and a constant protection for the hundreds and thousands of bushels of grain you will put through it.

Ship-Lap Blocks-Stronger Walls

The unusual strength of Preston-Lansing Silo walls prompted users of large grain bins to adopt our block for grain construction. It is proving ideal for the purpose.

The "ship-lap" joint and the twisted steel reinforcing system provides for a wall of practically invincible strength. It will withstand all the pressure that the heaviest grain load could ever put on it.

You will find the design of the block described in detail on pages 7 and 8 in connection with Preston-Lansing Silos. We are supplying the same block for grain bin service.

This gives you a grain bin of unusual strength and beauty. Blocks of uniform shade, clean mortar lines, the kind of grain bin structure that any man or company can be proud of.

Twisted Steel Reinforcing 10% Stronger than Rods

The re-inforcing system of Preston-Lansing Storage Bins is of a suitable twisted steel. As you may know, twisted steel gets a much stronger grip in cement than the reinforcing rods ordinarily used. It is a fact that it adds 10% greater strength to the completed wall.

With Preston-Lansing construction you get a complete twisted steel hoop every fifteen inches or at the top and bottom of each row of blocks. This allows a big margin of safety on any possible strain which the bin might be required to withstand.

The design of the block provides for an extra thick layer of cement between each row of blocks with but a little mortar line exposed on the inside and outside wall. This means getting an extra large reinforced cement binder with a smooth wall inside—no projections or crevices to catch grain.

It also means having a better looking structure from the outside. The appearance of the joint in the Preston-Lansing Bin is one that shows efficiency and better workmanship in every way.



Preston-Lansing Tile Elevators

Preston-Lansing Vitrified Tile Blocks are made in straight blocks for use in building crosswalls, warehouses, offices, top working houses, etc., thus enabling the entire structure to be erected of the same material, giving a uniform appearance and insuring fire proof construction throughout.

Ask Us About Our Storage Bin Service

We are taking more than the ordinary interest in vitrified tile storage bin construction and shall be glad to confer with you on your needs.

Whether you want to build your bins singly or in groups, we can supply the blocks and necessary twisted steel reinforcing for the complete job. Preston-Lansing Storage Bins are used for storing any material, in liquid or dry form.

Submit sketches of the way you want your storage bins arranged and let us send you an estimate of the number of blocks needed and their cost. We shall also be glad to suggest plans of construction.

Capacities of Preston-Lansing Storage Bins In Bushels of Wheat

Height ${10}$		Diameter				II. ' -I. i	Diameter						
	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	Height	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft
30	1873	2726	3711	4830	6090	7560	60	3780	5448	7422	9660	12222	15120
35	2205	3178	4430	5635	7105	9820	65	4095	5902	8040	10465	13240	16380
40	2524	3634	4948	6440	8120	10080	70	4410	6356	8659	11270	14259	17640
45	2835	4086	5566	7245	9135	11340	75	4725	6810	9277	12075	15277	18900
50	3155	4540	6185	8050	10150	12600	80	5040	7264	9895	12880	16296	20160
55	3465	4994	6803	8855	11165	13860	85	5155	7718	10514	13685	17314	21420

Capacity of various materials per	Diameter							
foot in height	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft		
Tons of ashes, 43 lbs. to cu. ft.	1.68	2.43	3.3	4.3	5.47	6.75		
Tons of coal, hard 54 " " " "	2.12	3.05	4.16	5.428	6.87	8.48		
Tons of coal, soft 50 " " " "	1.96	2.82	3.85	5.	6.36	7.85		
Tons of lime, ord. 52 " " " "	1.98	2.85	3.9	5.2	6.5	8.		
Unslacked 30 " " " "	1.18	1.69	2.3	3.	3.81	4.71		
Crushed limestone 90 " " " "	3.54	5.089	6.97	9.05	11 45	14.13		
Tons of sand 100 " " " "	3.93	5.654	7.69	10.05	12.72	15.708		
Tons of salt 45 " ,, " "	1.7	2.5	3.5	4.5	5.6	7.		
Bushels wheat 2150.42 cu. in. to bu	63.	90.8	123.7	161,67	203.7	252.		
Bushels corn, ears .63 cu, ft. " "	49.48	71.25	96,98	126,67	160.32	197.9		
Shelled 2150.42 " " " "	63.	90.8	123.7	161.	203.7	252.		
Gallons of water 231 " in. "gal.	587.	845.	1154.	1503.	1904.	2350.		

To obtain capacity of any height, multiply above items by desired height



Your Guarantee

Here is the guarantee that goes with every Preston-Lansing Vitrified Tile Silo. Properly speaking, a guarantee in regular form is not needed with a Preston-Lansing Vitrified Tile Silo, for there is no reason why the silo should not last for many centuries. This guarantee, therefore, is intended to protect you against any defects that may have escaped our inspection in vitrifying the blocks.

It is, of course, understood that the blocks will be cemented with only the highest grade cement, that you will follow our instructions in building the silo, and that you will allow it at least two weeks' time to set before filling.

With this understanding, we guarantee the material we furnish you to be entirely free from defects, and we further guarantee you against any loss or damage you may have, as a result of silage pressure, or from the silo being blown down or damaged by winds; the guarantee to be in effect to and including the third year from date of purchase.

J. M. Preston Co.,

Lansing, Mich.





Two 14x60's with Interspace for Flevating Machinery Wellington Flour Mills Co., Wellington, Ohio



Vitrified Tile